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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,055	12/02/2003	Byoung Ho Lim	054358-5022	2969

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WASHINGTON, DC 20004

EXAMINER
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CHEN, WEN YING PATTY

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/725,055	<b>Applicant(s)</b> LIM, BYOUNG HO	
	<b>Examiner</b> W. Patty Chen	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 is/are allowed.
- 6) ☒ Claim(s) 7-9, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Response to Amendment*

Applicant's Amendment filed Apr. 18, 2006 has been received and entered. Claims 1-19 remain pending in the current application, but claims 14-19 are withdrawn from consideration.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7-9 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chol (US 2002/0093600) in view of Gee-Sung et al. (US 5998230) further in view of Kim et al. (US 5731856).

With respect to claim 7 (Amended): Chol discloses in Figures 6A-6F and Paragraphs 0038-0043 a method of fabricating a liquid crystal display device, comprising the steps of:

forming a gate electrode (element 132), a gate bus line (not shown), and a gate pad (not shown) on a substrate (element 111);

forming a gate insulating layer (element 141), an active layer (element 145b), and a transparent conductive film (element 150) on an entire surface of the substrate;

patterning the active layer (element 145b) and transparent conductive film to form a data bus line (element 127), a data pad (not shown), a source electrode (element 133), a drain electrode (not labeled), a pixel electrode (element 117), a channel layer (not labeled), and an ohmic contact layer (element 147b);

wherein the data bus line, and the source, drain, and pixel electrodes include the transparent conductive film.

Chol fails to specifically disclose that the active layer is patterned concurrently with the transparent conductive film and further that a passivation layer is formed on an entire surface of the substrate and portions of the gate and data pads are exposed.

However, Gee-Sung et al. teach in Column 4 lines 32-39 of patterning the active layer simultaneously with the conductive layer for forming the drain and source and Kim et al. disclose in Figure 18B and Column 11 lines 6-25 and Column 12 lines 23-30 the forming of passivation layer (element 24) on the entire surface of the substrate covering the electrode lines and that the passivation layer is etched to expose the pad regions (element 112).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to fabricate a liquid crystal display device as taught by Chol wherein the channel layer and the ohmic contact layer is formed in the same step as forming the drain and source electrodes as taught by Gee-Sung et al., since Gee-Sung et al. teach that simultaneously

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patterning a plurality of films reduces the number of photo masks thus helps in reducing production cost and shortening the production speed (Column 4, lines 45-52) and wherein a passivation layer is further formed on the substrate and that the gate and data pads are exposed as taught by Kim et al., since Kim et al. teach that the passivation layer acts as a protection layer to the switching devices and that the pad regions are exposed so that the data lines and gate lines can be connected to a driving source (Column 11, lines 6-25).

As to claim 8: Chol further discloses in Paragraphs 0041-0043 that the step of patterning the active layer and the transparent conductive film includes a half-tone mask.

As to claim 9: Chol further discloses in Paragraph 0041 that the transparent conductive film includes indium tin oxide.

As to claim 12: Chol further discloses in Paragraph 0044 a step of forming a low resistance metal on the source electrode before the step of exposing the gate and data pad.

As to claim 13: Chol further discloses in Paragraph 0044 that the low resistance metal includes at least one of Cu, Ag, Au, Ti, and W.

### ***Allowable Subject Matter***

Claims 1-6 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 1, none of the prior arts teach or suggested alone or in combination the forming of a second organic material film on the passivation film and to expose a second portion of the gate pad and a first portion of the data pad by removing the second organic material using

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a lift-off process. Kim et al. (US 5731856) teach forming a passivation layer and then an organic layer to expose the gate and data pads by photolithography.

Therefore, claim 1 is allowed over the prior arts.

As to claims 2-6, since claims 2-6 are dependent either directly or indirectly on claims 1, therefore are also allowed.

Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

None of the prior arts teach or suggested alone or in combination the forming of an organic material film on the gate and data pads before forming a passivation layer.

### ***Response to Arguments***

Applicant's arguments with respect to claim 7 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. Patty Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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W. Patty Chen  
Examiner  
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WPC  
6/30/06

  
ANDREW SCHECHTER  
PRIMARY EXAMINER